



FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

ATTY. DOCKET NO.
LT-167

SERIAL NO.
10/722,808

APPLICANT
Dittmer et al.

FILING DATE
November 26, 2003

GROUP
2838

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
↑	3,458,798	07/29/69	Fang et al.			
↑	3,571,697	03/23/71	Phillips			
↑	3,579,091	05/18/71	Clarke et al.			
↑	3,581,186	05/25/71	Weinberger			
↑	3,582,758	06/01/71	Gunn			
↑	3,585,491	06/1971	Peterson			
↑	3,733,540	05/15/73	Hawkins			
↑	3,772,588	11/1973	Kelly et al.			
↑	3,784,893	01/08/74	Rando			
↑	3,863,128	01/28/75	Wilwerding			
↑	3,879,647	04/22/75	Hamilton et al.			
↑	3,992,638	11/16/76	Sauvanet			
↑	4,013,939	03/1977	Biess et al.			
↑	4,035,710	07/12/77	Joyce			
↑	4,071,884	01/31/78	Maigret			
↑	4,160,288	07/03/79	Stuart et al.			
↑	4,326,245	04/20/82	Saloh			
↑	4,395,675	07/26/83	Toumani			
↑	4,428,015	01/24/84	Nesler			
↑	4,462,069	07/24/84	Becky			
↑	4,479,174	10/23/84	Cates			
↑	4,493,017	01/08/85	Kammiller et al.			
↑	4,519,024	05/21/85	Federico et al.			
↑	4,541,041	09/1985	Park et al.			
↑	4,554,499	11/19/85	Sherman et al.			
↑	4,578,630	03/1986	Grosch			
↑	4,610,521	09/09/86	Inoue			
↑	4,634,956	01/06/87	Davis et al.			

EXAMINER

Sterrett

DATE CONSIDERED

8/23/03

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	4,672,303	06/09/87	Newton			
↑	4,672,518	06/09/87	Murdock			
	4,674,020	06/16/87	Hill			
↓	4,683,529	07/28/87	Bucher, II			
	4,709,315	11/24/87	Ramos			
	4,712,169	12/08/87	Albach			
	4,716,514	12/29/87	Patel			
	4,727,308	02/23/88	Huljak et al.			
↑	4,754,385	06/28/88	McDade et al.			
↓	4,801,859	01/31/89	Dishner			
	4,813,066	03/14/89	Holtz et al.			
	4,814,684	03/21/89	McCurdy			
	4,819,122	04/04/89	Gontowski, Jr.			
↑	4,823,070	04/18/89	Nelson			
	4,843,532	06/27/89	Freedman			
	4,866,587	09/12/89	Wadlington			
↓	4,870,555	09/26/89	White			
	4,884,183	11/1989	Sable			
	4,902,957	02/20/90	Cassani et al.			
	4,922,404	05/01/90	Ludwig et al.			
	4,928,200	05/22/90	Redl et al.			
	4,929,882	05/29/90	Szepesi			
	4,931,716	06/05/90	Jovanovic et al.			
	4,996,638	02/26/91	Orr			
	5,028,861	07/1991	Pace et al.			
	5,034,871	07/23/91	Okamoto et al.			
	5,066,900	11/19/91	Bassett			
	5,068,575	11/26/91	Dunsmore et al.			

EXAMINER

Stearrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
↑ 9/12 ↓	5,081,411	01/14/92	Walker			
	5,097,196	03/17/92	Schoneman			
	5,128,603	07/07/92	Wölfel			
	5,134,355	07/28/92	Hastings			
	5,138,249	08/11/92	Capel			
	5,144,547	09/01/92	Masamoto			
	5,170,333	12/08/92	Niwayama			
	5,177,676	01/05/93	Inam et al.			
	5,179,511	01/12/93	Troyk et al.			
	5,184,129	02/02/93	Fung et al.			
4/12	5,193,211	03/09/93	Nobusawa			
	5,237,606	08/17/93	Ziemann			
	5,309,078	05/1994	Cameron			
	5,396,412	03/07/95	Barlago			
	5,408,162	04/18/95	Williams			
	5,481,178	01/1996	Wileox et al.			
9/12	5,548,189	08/20/96	Williams			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
↑ 9/12 ↓	0 428 377 A2	05/22/91	EPO	H02m	3/335		
	60-32565	02/19/85	Japan	H02m	3/155	X	
	60-156269	08/16/85	Japan	H02m	3/28	X	
	63-307510	12/15/88	Japan	G05F	1/56		X
	3-113986	11/21/91	Japan	H02m	3/155	X	
	4-42771	02/13/92	Japan	H02m	3/155	X	
	4-49844	02/19/92	Japan	H02m	3/155	X	

EXAMINER

Stearrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
JLS	4-101286	09/01/92	Japan	No	copy	Found
	4-128086	11/20/92	Japan	H02m	3/55	X

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
✓	Analog Devices, Inc., "High Efficiency Synchronous Step-Down Switching Regulators ADP1148, ADP1148-3.3, ADP1148-5," Datasheet, pp. 1-14, 1997
✓	Archer, William R., "Current-Driven Synchronous Rectifier," Motorola TMOS Power FET Design Ideas, BR316, pp. 9-10, 1985
✓	Archer, William R., "Current Drives Synchronous Rectifier," EDN, p. 279, 11/28/85
✓	Blanchard, Richard, et al., "MOSFETs, Schottky Diodes Vie for Low-Voltage-Supply Designs," EDN, p. 197, 06/28/84
✓	Borghi et al., "Discontinuous Conduction Mode Power Switching Regulator IC," PCI October 1988 Proceedings, pp. 31-41, 10/88
✓	Brown, Marty, "Practical Switching Power Supply Design," pp. 20-34, Academic Press, Inc., 199
✓	Business Wire, "Micro Linear announces first single-chip power controller for notebook computers," 04/16/92
✓	Casey, L.F., "Circuit Design For 1-10 MHz DC-DC Conversion," Massachusetts Institute of Technology ScD Thesis, Fig. 2-15, pp. 73-80, 1989
✓	Cassani, John C. et al., "Sophisticated Control IC Enhances 1MHz Current Controlled Regulator Performance," Proceedings of HFPC, May 1992, pp. 167-173.
✓	Chetty, P.R., "DC timers control dc-dc converters" Electronics, pp. 121 & 123, 11/13/75
✓	Chryssis, George, "High-frequency switching power supplies," pp. 144-152 and 180-181, McGraw-Hill, 1989
✓	Dell Computer Corporation, "Dell Computer Corporation Introduces Advanced Notebook PC," (alleged to contain UC1895, see Unitrode Advance Information Datasheet 10/05/92), 09/91
✓	Dinsmore, D., "Dual regulator handles two input voltages," EDN, 01/21/93
✓	Fisher, R. A. et al., "Performance of Low Loss Synchronous Rectifiers in a Series-Parallel Resonant DC-DC Converter," Proceedings of the Fourth Annual IEEE Applied Power Electronics Conference and Exposition, pp. 240-246, 03/89
✓	Gauen, Kim, "Synchronous Rectifier Improves Step-Down Converter Efficiency," PCIM, pp. 8, 11-12 & 14-15, 04/93

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Gentowski et al., "Advanced New Integrated Circuits For Current Mode Control," Proceedings of the Power Electronics Show and Conference, pp. 341-352, 10/86
↑	Goodenough, F., "Dozing IC Op Amps Wake Up For Input Signal," Electronic Design, 12/05/91
	Goodenough, Frank, "Synchronous Rectifier UPS PC Battery Life," Electronic Design, pp. 47-53, 04/16/92
	Goodenough, Frank, "Low-Voltage Analog ICs Wait in the Wings," Electronic Design, 09/03/92
	Goodenough, F., "Raise Switcher Efficiency Above 90%," Electronic Design, 01/21/93
	Gottlieb, I. M., "Practical Power-Control Techniques," Howard W. Sams & Co., pp. 116-120, 1987
	Gottlieb, I. M., Electronic Power Control, TAB Books, pp. 107-111, 1991
	Gracie, Paul D., "Intermittent Converter Saves Power," EDN, p. 151, 09/01/89
	Graf, Rudolf F., "Modern Dictionary of Electronics," 6th Edition, pp. 402-03, 1984
	Grant, Duncan A. et al., "POWER MOSFETS, Theory and Application," pp. 239-256, Wiley-Interscience, 1989
	Harris Semiconductor, Hodgins et al., "HIP 5060 Family of Current Mode Control ICs Enhance 1 MHZ Regulator Performance," Application Note AN9212.1, pp. 11-191 to 11-197, 1992
	Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Datasheet, 04/94
	Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Preliminary Datasheet, 01/92
	Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Datasheet, 05/92
	Hewett, S., "Improved Switched Mode Power Supply Regulation by Eliminating Turn-off Spikes," IBM Technical Disclosure Bulletin, Vol. 31, No. 4, pp. 97-98, 09/88
	Hnatek, Eugene R., "Design of Solid State Power Supplies," Third Edition, pp. 65-70, Van Nostrand Reinhold, 1989
	Horowitz & Hill, "The Art of Electronics," pp. 356-359, Cambridge University Press, 1989
	Huffman, B., "Efficiency and Power Characteristics of Switching Regulator Circuits," Application Note 46, Linear Technology, 11/91
	Ikeda, S. et al., "Power MOSFET for Switching Regulator," International Telecommunications Energy Conference, 10/82
	Impala Linear, "ILC6311 Synchronous 3A Switching Regulator With Auto-Light Load Mode," Preliminary Datasheet, pp.30-38, January 1997
	Impala Linear, "ILC6350 Dual Output Synchronous Step-Down DC-DC Controller," Advanced Information Preliminary Datasheet, pp. 1-6, January 1997
↓	Impala Linear, "ILC6310 Synchronous Step-down DC-DC Converter With Auto Light-Load Mode Select," Final Datasheet, pp. 21-38, June 1996

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
✓ JLD	Impala Linear, "ILC6330 13A Adjustable Synchronous DC-DC Controller," Preliminary Datasheet, pp. 39-41, June 1996
✓	International Rectifier, "IR Application Note AN-978, HV Floating MOS Gate Driver ICs, Full Bridge With Current Mode Control," Application Note from web page, Date Unknown
✓ JLD	International Rectifier, "IR Application Note AN-978, HV Floating MOS-Gate Driver ICs, A Typical Block Diagram," Application Note from web page, Date Unknown
✓	International Rectifier, Clemente et al., "HV Floating MOS-Gate Driver IC," Application Note AN-978A, 1990
✓	Intersil, "ISL6223 Mobile Microprocessor CORE Voltage Regulator Multi-Phase Buck PWM Controller," Datasheet, 03/01
✓	Kassakian, J. et al., "Principles of Power Electronics," pp. 103-165, Addison-Wesley Publishing Company, 1991
✓	Kerridge, Brian, "Battery power breeds efficient regulators," EDN, pp. 103-108, 03/18/93
✓	Lee, Y. S. and Cheng, Y. C., "A 580 kHz switching regulator using on-off control," Journal of the Institution of Electronic and Radio Engineers, Vol. 57, No. 5, pp. 221-226, 09/87
✓ JLD	Lee, et al., "Design of Switching Regulator with Combined FM and On-Off Control," IEEE Transactions on Aerospace and Electronic Systems, Vol. AES-22, No. 6, pp. 725-731, 11/8
✓	Linear Technology, "LT1074 Switching Regulator," Preliminary Datasheet, 06/89
✓	Linear Technology, "LT1072 1.25A High Efficiency Switching Regulator," Datasheet, 1990
✓	Linear Technology, "New Device Cameos," Linear Technology Magazine, 10:18-19 1992
✓	Linear Technology, "LTC1148/LTC1148-3.3/LTC1148-5 High Efficiency Synchronous Stepdown Switching Regulator," Preliminary Datasheet, 11/92
✓	Linear Technology, Wilson, M., "LT1158 Half Bridge N-Channel Power MOSFET Driver," Datasheet, 1992
✓ JLD	Linear Technology, Williams, J., Application Note 29, "Some Thoughts on DC-DC Converters," 1990 Linear Applications Handbook, pp. AN29-1 to AN29-44, 10/88
✓	Linear Technology, "LT1524/LT3524 Regulating Pulse Width Modulator," 1990
✓	Linear Technology, "LT1432 5V High Efficiency Step Down Switching Regulator Controller," 1992 Linear Databook Supplement, pp. 4-145 to 4-171.
✓ JLD	Linear Technology, "LT1170/LT1171/LT1172 100kHz 5A, 2.5A, 1.25A High Efficiency Switching Regulators," Data Sheet, 1991
✓	Linear Technology, "LT1271/LT1269 4A High Efficiency Switching Regulators," Data Sheet, 1992
✓	Linear Technology, Pietkiewicz et al., "DC-DC Converters for Portable Computers," Design Note 52, 1991
✓	Linear Technology, Nelson, C., App. Note 19, "LT 1070 Design Manual," 06/86

EXAMINER

Stearrett

DATE CONSIDERED

0/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.
		LT-167	10/722,808
		APPLICANT	
		Dittmer et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE	GROUP
		November 26, 2003	2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Linear Technology, "LTC1873 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller With 5-Bit VID," Datasheet, 1999
	Linear Technology, "LTC1878 High Efficiency Monolithic Synchronous Step-Down Regulator," Initial Release, Final Electrical Specifications, May 2000
	Linear Technology, "LTC1702 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller," Datasheet, 1999
✓	Linear Technology, Williams, J., App. Note 25, "Switching Regulators for Poets," 09/87
✓	Linear Technology, "LT1846/1847, LT3846/3847 Current Mode PWM Controller," Datasheet, 1990
	Linear Technology, "LTC1703 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller with 5-Bit VID," Datasheet, 1999
✓	Linear Technology, "LTC1735 High Efficiency Synchronous Step-Down Switching Regulator," Datasheet, 1998
✓	Linear Technology, "LTC1736 5-Bit Adjustable High Efficiency Synchronous Step-Down Switching Regulator," Datasheet, 1999
✓	Linear Technology, "LTC1775 High Power NO-RSENSETM Current Mode Synchronous Step-Down Switching Regulator," Datasheet, 1999
✓	Linear Technology, Williams, J., Application Note 35, "Step Down Switching Regulators," 1990 Linear Applications Handbook, pp. AN35-1 to AN35-32, 8/89
✓	Linear Technology, "LTC1436A/LTC1436A-PLL/LTC1437A High Efficiency Low Noise Synchronous Step-Down Switching Regulators," Datasheet, 1996
✓	Linear Technology, "LTC1438/LTC1439 Dual High Efficiency, Low Noise, Synchronous Step-Down Switching Regulators," Datasheet, 1997
✓	Linear Technology, Nelson, C., "The LT1432: 5 Volt Regulator Achieves 90% Efficiency," Linear Technology Magazine, Vol. 2, No. 1, pp. 18-19, 2/92
✓	Linear Technology, Pietkiewicz, S., "A Low-Voltage, Micro-Power 1 Amp Switching Regulator," presented at the International Solid State Circuits Conference, 1990
✓	Linear Technology, LT1073 Micropower DC-DC Converter Adjustable and Fixed 5V, 12V," Datasheet, 1991
✓	Linear Technology, "LTC1538-AUX/LTC1539 Dual High Efficiency, Low Noise, Synchronous, Step-Down Switching Regulators," Datasheet, 199
✓	Linear Technology, "LTC1142/LTC1142L/LTC1142HV Dual High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1995
✓	Linear Technology, "LTC1149/LTC1149-3.3/LTC1149-5 High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1993

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Linear Technology, "LTC1627 Monolithic Synchronous Step-Down Switching Regulator," Datasheet, 1998
✓	Linear Technology, "LTC1159/LTC1159-3.3/LTC1159-5 High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1994
✓	Linear Technology, "LTC1435 High Efficiency Low Noise Synchronous Step-Down Switching Regulator," Datasheet, 1996
✓	Linear Technology, "LTC1267/LTC1267-ADJ/LTC1267-ADJ5 Dual High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1995
✓	Linear Technology, "LTC1266/LTC1266-3.3/LTC1266-5 Synchronous Regulator Controller for NB or P-Channel MOSFETs," Datasheet, 1995
✓	Markus, John, "Guidebook of Electronic Circuits," pp. 647 & 649, 1971
✓	Maxim Integrated Products, Inc., "MAX638 Fixed +5V CMOS Step-Down Switching Regulator," Maxim 1989 Integrated Circuits Data Book, pp. 6-57 to 6-64, 1989
✓	Maxim Integrated Products, Inc., "MAX782/MAX786 Notebook Computer Power Supplies," Advance Information Data Sheet, February 1993, pp.1-8.
✓	Maxim Integrated Products, "MAX1630-MAX1635 Multi-Output, Low-Noise Power Supply Controllers for Notebook Computers," Datasheet Rev. 3; 04/97
✓	Maxim Integrated Products, "MAX798 High-Accuracy Step-Down Controller With Synchronous Rectifier for CPU Power," Datasheet, 12/96
✓	Maxim Integrated Products, "MAX796/MAX797/MAX799 Step-Down Controllers With Synchronous Rectifier for CPU Power," Datasheet Rev. 3a; 11/97
✓	Maxim Integrated Products, Inc., MAX782, Addendum to Advance Information Sheet and EV Kit Document, bearing Bates numbers L07760 -007785, contains dates in 2/93 and 3/93 (MAX782 Advance Information Data Sheet cited above)
No Copy	Maxim Integrated Products, Inc., "MAX635/36/37 Fixed Output CMOS Inverting Switching Regulators," Maxim 1989 Integrated Circuits Data Book, pp. 6-49 to 6-46, 1989
No Copy	Maxim Integrated Products, Inc., "MAX639 High Efficiency, +5V Adjustable Step-Down Switching Regulator," Datasheet, 12/91
✓	Maxim Integrated Products, Inc., "MAX635/636/637 Preset/Adjustable Output CMOS Inverting Switching Regulators," Datasheet, Date Unknown
✓	Maxim Integrated Products, "MAX782 Triple-Output Power-Supply Controller for Notebook Computers," Datasheet Rev. 2; 5/94
No Copy	Maxim Integrated Products, Inc., "MAX783 Triple-Output Power-Supply Controller for Notebook Computers," Datasheet, 05/94

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Maxim Integrated Products, "MAX887 100% Duty Cycle, Low Noise, Step-Down PWM DC-DC Converter," Datasheet, 09/96
✓	Maxim Integrated Products, Inc., "MAX746 High-Efficiency, PWM, Step-Down, N-Channel DC-DC Controller," Datasheet, 11/93
✓	Maxim Integrated Products, Inc., "MAX747 High-Efficiency PWM, Step-Down P-Channel DC-DC Controller," Datasheet, 09/93
✓	Maxim Integrated Products, Inc., "MAX777L/MAX778L/MAX779L Low-Voltage Input, 3V/3.3V/5V/ Adjustable Output, Step-Up DC-DC Converters," Datasheet, 07/96
✓	Maxim Integrated Products, "MAX767 5V-to-3.3V, Synchronous, Step-Down Power-Supply Controller," Datasheet Rev. 2; 08/94
✓	Meakin, Mike, "The LM3578 Switching Power Regulator," Electronic Engineering, pp. 47-52, 07/86
✓	Micro Linear Corporation, "ML4861 Low Voltage Boost Regulator," Preliminary Datasheet, July 1992
✓	Micro Linear Corporation, "ML 4822 DC/DC Converter Controller for Portable Computers," Datasheet, 08/91
✓	Micro Linear Corporation, "ML4862 EVAL User's Guide," 06/92
✓	Micro Linear Corporation, "ML4873 Battery Power Control IC," Datasheet, 01/97 (preliminary version 03/93 - cited below)
✓	Micro Linear Corporation, "ML4862 Battery Power Control IC," Datasheet, 03/97
✓	Micro Linear Corporation, "ML4862 Battery Power Control IC," Advance Information Datasheet, 07/92
✓	Micro Linear Corporation, "ML4860 Battery to DC Power Control IC for Portable Systems," Advanced Information, 02/92
No COPY	Micro Linear Corporation, "ML4873 Battery Power Control IC," Advance Information Data Sheet, March 15, 1993, pp. 1-2.
✓	Myers, R. and Peck, R., "200-kHz Power FET Technology in New Modular Power Supplies," Hewlett-Packard Journal, 08/81
✓	NASA Jet Propulsion Laboratory, * "Synchronous Half-Wave Rectifier," 7/89
✓	National Semiconductor Corporation, "LM1578/LM2578/LM3578 Switching Regulator," Preliminary Datasheet, 1987
✓	Patel, Raoji, "Using Bipolar Synchronous Rectifiers Improves Power Supply Efficiency," Proceedings of the Power Sources Conference, 11/84
✓	Patel, R., "Bipolar synchronous rectifiers cut supply losses," EDN, 04/04/85
✓	Quinnell, Richard A., "Analog IC Combines Five Functions for Battery Power Management," EDN, 04/23/92

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
✓ <i>QIA</i>	Redl et al., "Frequency Stabilization and Synchronization of Free-Running Current-Mode Controlled Converters," PESC '86 Record, pp. 519-530, 1986
	Redl, et al., "Overload Protection Methods For Switching-Mode DC/DC Converters: Classification, Analysis, and Improvements," PESC '87 Record, pp. 107-118, 1987
✓ <i>↑</i>	Rippel, W.E., "Synchronous Half-Wave Rectifier," NASA Jet Propulsion Laboratory Technical Support Package Vol. 13, No. 7, Item #15, 7/89
✓	Sakai, E. and Harada, K., "A New Synchronous Rectifier Using Bipolar Transistor Driven by Current Transformer," Fourteenth International Telecommunications Energy Conference, pp. 424-429, 10/92
✓ <i>QIA</i>	Sakai, E. and Harada, K., "Synchronous Rectifier Using a Bipolar Transistor Driven by Current Transformer," Journal of the Society of Electronic Data Communication, Vol. J-74-B-I, No. 8, pp. 639-646, 08/91 (in Japanese, with translation)
✓	Savant, C.J., Jr., et al., "Electronic Design: Circuits and Systems," pp. 612-613, The Benjamin/Cummings Publishing Co., 1991
✓	Shepard, J., "Powering portable systems," EDN, 11/05/92
✓	Siliconix, "Si91XX Synchronous Buck Controller," Objective Specification, 12/20/90
✓	Siliconix, "Siliconix Si9110/Si9111," Datasheet, 10/87
✓ <i>QIA</i>	Siliconix, "Synchronous Rectification," Design Ideas, 10/80
✓	Siliconix, "Si9150 Synchronous Buck Regulator Controller, S-42677, Rev. D," Datasheet, 2/14/95
✓ <i>↑</i>	Siliconix, "High-Efficiency Buck Converter for Notebook Computers," Application Note AN92-4, Date Unknown
✓ <i>QIA</i>	Siliconix, "Designing DC/DC Converters with the Si9110 Switchmode Controller," Siliconix Power Products Data Book, 1991
✓	Siliconix, "Si9150CY/BCY Synchronous Buck Converter Controller," Preliminary Data Sheet, 10/08/92
✓	Siliconix, "Si9150 Synchronous Buck Converter Controller," Objective Specification, handwritten pp. 7-17, 9/10/91
✓ <i>↓</i>	Siliconix, Si9150 documents bearing Bates numbers U040269-71, 9104
✓ <i>↑</i>	Soclof, Sidney, "Applications of Analog Integrated Circuits," Figure 2.25, pp. 74-75, Prentice-Hall, Inc. 1985
✓ <i>QIA</i>	Sokal et al., "Control Algorithms and Circuit Designs For Optimally Flyback-Charging an Energy-Storage Capacitor," IEEE Fifth Applied Power Electronics Conference, pp. 295-301, 1990
✓	Steigerwald, R., "High-Frequency Resonant Transistor DC-DC Converters," IEEE Transactions on Industrial Electronics, Volume IE-31, Number 2, pp. 181-191, 05/84
✓ <i>↓</i>	Taylor, "Flyback Converter," Electronic Engineering, p. 23, July, 07/76

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.
		LT-167	10/722,808
		APPLICANT	
		Dittmer et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE	GROUP
		November 26, 2003	2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
✓	Toyoda, "SB3012P Step Down DC-DC Converter Controller," Datasheet, March 1997
✓	Toyoda, "SB3030P Step Down DC-DC Converter Controller," Datasheet, December 1996
✓	Toyoda, "SB3011P Step Down DC-DC Converter Controller," Datasheet, March 1997
✓	Toyoda, "SB3052P Dual Channel Step Down DC-DC Converter Controller," Datasheet, February 1998
✓	Toyoda, "SB3020P Dual Channel Step Down DC-DC Converter Controller," Datasheet, March 1997
✓	Toyoda, "SB3010P Synchronous Stepdown DC-DC Converter Controller," Datasheet August 10, 1995
✓	Toyoda, "SB3013P Step Down DC-DC Converter Controller," Datasheet, March 1997
✓	Toyoda, "SB3050P Dual Channel Step Down DC-DC Converter Controller," Datasheet, March 1997
✓	Toyoda, "SB3031P Step Down DC-DC Converter Controller," Datasheet, December 1996
No Copy	Uchida, Takahito, "Control Circuit for Switching Regulator," Japanese Inventor Associated Disclosed Technology Publication No. 92-2362, published 2/15/92 (in Japanese, with translation)
✓	Unitrode, "Using Bipolar Synchronous Rectifiers Improves Power Supply Efficiency," Application Note U-103, 1989-1990 Unitrode Semiconductor Databook and Application Notes, pp. 12-88 to 12-94, 6/85
✓	Unitrode, "UC1846/7, UC2846/7, UC3846/7 Current Mode PWM Controller," Datasheet, 1/97
No Copy	Unitrode, "UCC29421/2, UCC39421/2 Multimode High Frequency PWM Controller," Preliminary Datasheet, 10/1999
✓	Unitrode, "UC1874-1,-2, UC2874-1,-2, UC3874-1,-2 High Efficiency, Synchronous Step-Down (Buck) Controllers," Datasheet, 02/1998
✓	Unitrode, "UC1895, UC2895, UC3895 Synchronous Rectifier Buck PWM Controller," Advance Information Datasheet, 10/06/92
✓	Unitrode, "UC1870-1/-2, UC2870-1/-2, UC3870-1/-2 High Efficiency, Synchronous, Step-Down (Buck) Controllers," Datasheet, 08/1998
✓	Unitrode, "UCC3941-3/-5/-ADJ 1V Synchronous Boost Converter," Preliminary Datasheet, 3/97
✓	Unitrode, "UCC19411/2/3, UCC29411/2/3, UCC39411/2/3 Low Power Synchronous Boost Converter," Preliminary Datasheet, 4/98
No Copy	Unitrode, "UCC1582, UCC2582, UCC3582 High Efficiency Synchronous, Step-Down Controller," Preliminary Datasheet, 1/97
No Copy	Wilcox, M., "The LT1158: Low Voltage, N-Channel Bridge Design Made Easy," Linear Technology Magazine, Vol. 2, No. 1, 2/92
✓	Williams, J. and Huffman, B., "Proper instrumentation eases low-power dc/dc converter design," EDN, 10/27/88
No Copy	Williams, J., "Basic Principles and Ingenious Circuits Yield Stout Switchers," EDN, 01/18/90

EXAMINER

Stearrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.
		LT-167	10/722,808
		APPLICANT	
		Dittmer et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE	GROUP
		November 26, 2003	2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
✓	Williams, J., "Signal conditioning circuits use *power design techniques," EDN, 08/20/87
✓	Williams, J., "Employ pulse-width modulators in a wide range of controllers," EDN, 09/02/81
✓	Williams, J., "Switching regulator takes on more power," Electronic Product Design, 01/86
✓	Williams, J., "Design dc-dc converters to catch noise at the source," Electronic Design, 10/15/81
✓	Williams, J., "Conversion techniques adapt voltages to your needs," EDN, 11/10/82
	Williams, J., "Special circuit design techniques enhance regulator performance," EDN, 09/01/83
✓	Williams, J., "Use low-power design methods to condition battery outputs," EDN, 10/18/84
	Williams, J., "Chopper amplifier improves operation of diverse circuits," EDN, 03/07/85
No copy	Williams, J., "Refine V/F converter operation with novel design techniques," EDN, 05/30/85
	Williams, J. and Huffman, B., "Design dc/dc converters for power conservation and efficiency," EDN, 11/10/88
	Williams, J. and Waller, B., "Performance-Enhancement Techniques for Three-Terminal Regulators," New Electronics, 10/04/83
	Williams, J. and Huffman, B., "Switched-capacitor networks simplify dc/dc-converter designs," EDN, 11/24/88
	Williams, J., "Regulator IC speeds design of switching power supplies," EDN, 11/12/87
	Williams, J., "Micropower circuits assist low-current signal conditioning," EDN, 08/06/87
	Williams, J. and Huffman, B., "Precise converter designs enhance system performance," EDN, 10/13/88
	Williams, J. and Dendinger, S., "Simplify feedback controllers with a 2-quadrant PWM IC," EDN, 05/26/83
	Williams, J., "Bridge forms synchronous rectifier," EDN
	Williams, J., "Designing supplies for powering LCD backlighting," EDN, 10/29/92
	Williams, J., "1.5 to 5V converter supplies 200mA," EDN, 10/15/92
	Williams, J., "Design linear circuits that serve digital system needs," EDN, 04/27/89
	Williams, J., "Clever techniques improve thermocouple measurements," EDN, 05/26/88
	Williams, J., "Design techniques extend V/F-converter performance," EDN, 05/16/85
	Williams, J., "Design linear circuits for 5V operation," EDN, 05/02/85
	Williams, J., "Considerations for Five Volt Linear Circuits," Professional Program Session Record 20, Circuits for Analog Signal Processing and Data Conversion is Single +5V Supply Systems, Wescon/85, 11/85
	Williams, J., "Analog circuits operate from a 1.5V cell," EDN, 09/19/85
	Williams, J., "Astute designs improve efficiencies of linear regulators," EDN, 08/17/89
	Williams, J., "Galvanically isolated switching supplies provide high power," EDN, 11/26/87

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
<i>Q12</i>	Williams, J., "Correcting power-supply problems," EDN, 10/10/91

EXAMINER *Stersell*

DATE CONSIDERED *8/23/05*

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 SEP 01 2004 PATENT & TRADEMARK OFFICE	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2038 To Be Assigned

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	3,784,893	01/08/74	Rando			
	4,326,245	04/20/82	Saleh			
	4,672,303	06/09/87	Newton			
	4,727,308	02/23/88	Huljak et al.			
	4,819,122	04/04/89	Gontowski, Jr.			
	4,851,953	07/25/89	O'Neill et al.			
	4,928,200	05/22/90	Redl et al.			
	4,929,882	05/29/90	Szepesi			
	5,034,871	07/23/91	Okamoto et al.			
	5,055,767	10/08/91	Nelson			
	5,237,606	08/17/93	Ziermann			
	5,309,078	05/19/94	Cameron			
	5,396,412	03/07/95	Barlage			
	5,481,178	01/19/96	Wilcox et al.			
	5,731,694	03/24/98	Wilcox et al.			
	5,847,554	12/08/98	Wilcox et al.			
	5,994,885	11/30/99	Wilcox et al.			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	4-101286	09/01/92	Japan	H02M	3/155	X	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Borghi et al., "Discontinuous Conduction Mode Power Switching Regulator IC," PCI October 1988 Proceedings, pp. 31-41, 10/88

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP <u>28 33</u> To Be Assigned

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
✓ <i>[Signature]</i>	Casey, L.F., "Circuit Design For 1-10 MHZ DC-DC Conversion," Massachusetts Institute of Technology ScD. Thesis, Fig. 3-15, pp. 73-80, 1989
✓ <i>[Signature]</i>	Cherry Semiconductor, "CS-5120 Synchronous NFET Buck Controller With V2 Architecture," Datasheet, 04/08/97
✓ <i>[Signature]</i>	Gontowski et al., "Advanced New Integrated Circuits For Current-Mode Control," Proceedings of the Power Electronics Show and Conference, pp. 341-352, 10/86
✓ <i>[Signature]</i>	International Rectifier, "IR Application Note AN-978, HV Floating MOS Gate Driver ICs, Full Bridge With Current Mode Control," Application Note from web page, Date Unknown
✓ <i>[Signature]</i>	Intersil, "ISL6223 Mobile Microprocessor CORE Voltage Regulator Multi-Phase Buck PWM Controller," Data Sheet, 10/01, File No. 9013
✓ <i>[Signature]</i>	Linear Technology, "LT1432 5V High Efficiency Step-Down Switching Regulator Controller," <u>1992 Linear Databook Supplement</u> , pp. 4-145 to 4-171.
✓ <i>[Signature]</i>	Linear Technology, "LTC1625 NO R _{SENSE} ™ Current Mode Synchronous Step-Down Switching Regulator," Datasheet, 1998
✓ <i>[Signature]</i>	Linear Technology, "LTC1627 Monolithic Synchronous Step-Down Switching Regulator," Datasheet, 1998
✓ <i>[Signature]</i>	Linear Technology, "LTC1702 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller," Datasheet, 1999
✓ <i>[Signature]</i>	Linear Technology, "LTC1703 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller with 5-Bit VID," Datasheet, 1999
✓ <i>[Signature]</i>	Linear Technology, "LTC1775 High Power NO R _{SENSE} ™ Current Mode Synchronous Step-Down Switching Regulator," Datasheet, 1999
✓ <i>[Signature]</i>	Linear Technology, "LTC1778 Wide Operating Range, NO R _{SENSE} ™ Step-Down Controller," Datasheet, 01/2001
✓ <i>[Signature]</i>	Linear Technology, "LTC1873 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller With 5-Bit VID," Datasheet, 1999
✓ <i>[Signature]</i>	Linear Technology, "LTC1877 High Efficiency Monolithic Synchronous Step-Down Regulator," Initial Release, Final Electrical Specifications, May 2000
✓ <i>[Signature]</i>	Linear Technology, "LTC1878 High Efficiency Monolithic Synchronous Step-Down Regulator," Initial Release, Final Electrical Specifications, May 2000
✓ <i>[Signature]</i>	Linear Technology, "LTC3711 5-Bit Adjustable, Wide Operating Range, NO R _{SENSE} ™ Step-Down Controller," Initial Release Datasheet, January 2001
✓ <i>[Signature]</i>	Linear Technology, "LTC3714 Intel Compatible, Wide Operating Range, Step-Down Controller with Internal Op Amp," Initial Release Datasheet, April 2001

EXAMINER

Stearrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.
		LT-167	10/722,808
		APPLICANT	
		Dittmer et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE	GROUP <u>2838</u>
		November 26, 2003	To Be Assigned

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
✓	Linear Technology, Nelson, C., App. Note 19, "LT-1070 Design Manual," 06/86
✓	Linear Technology, Wilcox, M., "LT1158 Half Bridge N-Channel Power MOSFET Driver," Datasheet, 1992
✓	Maxim Integrated Products, "MAX1710/MAX1711/MAX1712 High-Speed, Digitally Adjusted Step-Down Controllers for Notebook CPUs," Datasheet, 2000
✓	Maxim Integrated Products, "MAX887 100% Duty Cycle, Low-Noise, Step-Down PWM DC-DC Converter," Datasheet, 09/96
✓	Micro Linear Corporation, "ML4861 Low Voltage Boost Regulator," Preliminary Datasheet, July 1992
✓	Redl, et al., "Overload-Protection Methods For Switching-Mode DC/DC Converters: Classification, Analysis, and Improvements," PESC '87 Record, pp. 107-118, 1987
✓	Texas Instruments, "TPS40050, TPS40051, TBS40053 Wide-Input Synchronous Buck Controller," Datasheet, 09/03
✓	Texas Instruments, "TPS40060, TPS40061 Wide-Input Synchronous Buck Controller," Datasheet, 02/03
✓	Texas Instruments, "TPS5120 Dual Output, Two-Phase Synchronous Buck DC/DC Controller," Datasheet, 02/2001
✓	Umminger, Christopher, B., "New No RSENSE™ Controllers Deliver Very Low Output Voltages," Linear Technology Magazine, pp. 16-20, 2/2001
✓	Unitrode, "UCC1582, UCC2582, UCC3582 High Efficiency Synchronous, Step Down Controller," Preliminary Datasheet, 1/1997
✓	Unitrode, "UCC29421/2, UCC39421/2 Multimode High Frequency PWM Controller," Preliminary Datasheet, 10/1999
✓	Williams, J. and Dendinger, S., "Simplify feedback controllers with a 2-quadrant PWM IC," EDN, 05/26/83
✓	Williams, J., "Special circuit-design techniques enhance regulator performance," EDN, 09/01/83

EXAMINER

Sterrett

DATE CONSIDERED

8/23/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.